

Rejections under 35 U.S.C. § 112, second paragraph

Claims 2 and 11 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite. In particular, the Office asserts that it is unclear what is meant by the phrase “does not specifically bind”. Applicants respectfully traverse the rejection.

Claims 2 and 11 each recite that the “antibody does not specifically bind PrP^C”. Applicants point out that one skilled in the art would simply recognize this phrase as encompassing any antibody that does not specifically react with PrP^C. Consistent with this straightforward meaning, the specification identifies exemplary antibodies having such characteristics, see for example, p. 18, lines 9-10 (“When pAbC2 IgG was coupled to the beads and incubated with normal brain homogenates, no detectable PrP was immunoprecipitated (Figure 6, lanes 9 and 10)”), p. 18, lines 20-22 (“Anti-YYR IgG does not recognize denatured recombinant bovine PrP^C in western blotting (data not shown), similar to studies detailed below with mouse anti-YYR monoclonal antibodies.”), and p. 21, lines 2-3 (“Finally, the lack of cell surface immunoreactivity provides an independent verification of the fact that anti-YYR antibodies do not recognize PrP^C.”) In short, the commonly understood meaning of this phrase, combined with the description provided in the specification, clearly identifies the intended scope of the phrase “does not specifically bind”. Through the description of these exemplary antibodies and their characterization, applicants have provided guidance to those skilled in the art as to the meaning of the claim term at issue. As such, this description “reasonably apprises those skilled in the art” of the scope of the present claims, and it is this standard, and not a standard of “exact bounds,” that is required by the case law. Miles Laboratories, Inc. v.

Shandon, Inc., 997 F.2d 870, 27 U.S.P.Q.2d 1123 (Fed. Cir. 1993) (“If the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, § 112 demands no more...The degree of precision necessary for adequate claims is a function of the nature of the subject matter.”). One skilled in the art would clearly appreciate what is meant and encompassed by the phrase, and this basis for the rejection of claims 2 and 11 may be withdrawn.

Rejections under 35 U.S.C. § 102

Claims 1-8, 10-17, and 80-82 stand rejected under 35 U.S.C. § 102(b) as anticipated by Korth et al. (Nature). This rejection should be withdrawn.

To support a rejection under § 102, a single prior art reference must identically describe all of the elements and limitations of a rejected claim. Korth (Nature) does not meet this test.

Claim 1 is directed to “an antibody or fragment thereof that binds with high binding affinity to a YYX epitope of a mammalian PrP^{Sc}.” As discussed below, Korth’s 15B3 and 6H4 antibodies fail to meet this limitation, and therefore do not anticipate applicants’ claimed invention.

Applicants first point out that Korth (Nature) fails to disclose an antibody that binds with high binding affinity to a YYX epitope of a mammalian PrP^{Sc} as presently claimed.

Turning first to the 15B3 antibody, Korth’s own teaching fails to disclose an antibody that binds to a YYX epitope of a mammalian PrP^{Sc}. As evidence of this

assertion, applicants direct the examiner's attention to Figure 2 of Korth (Nature). For the Office's convenience, applicants enclose Appendix A, which provides the amino acid sequences of the 104 13-residue peptides sequentially shifted in steps of two amino acids and covering the entire mature bovine PrP described by Korth (Nature).¹ In Figure 2, Korth (Nature) describes several peptides which include a YYX epitope that are not bound by the 15B3 antibody. For example, the 15B3 antibody failed to bind to peptides 66-68, 70-72, and 102-104 which each include a YYX epitope such as YYR or YYQ. Furthermore, the 15B3 antibody bound to peptide 62, which does not include a YYX epitope. How then does Korth (Nature) describe applicants' claimed antibodies when the reference itself fails to disclose an antibody that binds to a YYX epitope? Accordingly, these data alone indicate that Korth (Nature) does not identically describe applicants' claimed antibodies.

Furthermore, applicants point out that Korth's 6H4 antibody does not bind a YYX epitope. As evidence of this assertion, applicants again direct the examiner's attention to Paramithiotis et al., *Nature Medicine* (2003) 9:893-899, previously made of record in this case (copy enclosed).² In particular, applicants direct the Examiner's attention to Figure 3. As noted in Figure 3a, PrP^{Sc}-selective antibodies and 6H4 recognize different sites on PrP^{Sc}. Given that 6H4 recognizes a different epitope than antibodies such as 1A12 and

¹ In Fig. 2, Korth (Nature) describes "a gridded array of synthetic peptides corresponding to bovine PrP...Each spot corresponds to a 13-amino-acid peptide, which is shifted by two amino acids along the bovine PrP sequence relative to the previous peptide...A total of 104 peptides were used to cover the whole bovine PrP sequence including the six octapeptide repeat sequence [citation omitted]."

² Applicants note that the first author on this *Nature Medicine* article, Eustache Paramithiotis, is also a co-inventor on the present application.

17D10, each of which bind a YYX epitope, the anticipation rejection over Korth (Nature), in view of the 6H4 antibody, may also be withdrawn.

In sum, Korth (Nature) does not describe an antibody that binds to a YYX epitope of a mammalian PrP^{Sc}. Moreover, given applicants' remarks previously made of record, the present Office Action has not specifically pointed to a description of any such antibody in the Korth (Nature) disclosure. Given that Korth (Nature) simply does not describe the type of antibodies claimed in the present application, the § 102(b) rejection may be withdrawn.

Claims 1-17 and 80-82 stand rejected under 35 U.S.C. § 102(a) as anticipated by Korth et al (WO 98/37210) or under 35 U.S.C. § 102(b) by Korth et al. (EP 0 861 900). Applicants respectfully traverse each of these rejections.

Korth (WO 98/37210) and Korth (EP 0 861 900) both fail to disclose antibodies that meet applicants' claim limitations and, therefore, fail to anticipate applicants' claimed invention. Applicants again direct the Office's attention to Appendix A for a listing of Korth's 104 13-residue peptides.³ In particular, Korth (WO 98/37210) discloses that the 15B3 antibody bound to peptide 62, which does not include a YYX epitope, and failed to bind peptides 66, 67, 68, 70, 71, 72, 101, 103, and 104, which include a YYX epitope. Similarly, Korth (EP 0 861 900) describes the 15B3 antibody as binding to peptides 33, 34, 53, 69, 76, 77, 78, and 79 each of which do not include a YYX epitope. Korth (EP 0 861 900) further teaches that the 15B3 antibody failed to bind peptides 63,

³ Korth (WO 98/37210) discloses a gridded array of synthetic peptides consisting of 104 13-residue peptides, for example, at p. 11 (lines 18-32) and p. 18 (lines 9-11), and Korth (EP 0 861 900) discloses such an array, for example, at p. 6 (lines 27-34) and p. 9 (lines 6-8).

64, 65, 66, 67, 68, 70, 71, 72, 101, 102, 103, and 104, each of which include a YYX epitope. Furthermore, as indicated above, because the 6H4 does not recognize a YYX epitope, the 6H4 antibody cannot anticipate applicants' claimed invention. Given that neither Korth (WO 98/37210) nor Korth (EP 0 861 900) discloses applicants' claimed antibodies that bind to a YYX epitope, each of these rejections should also be withdrawn.

Finally, applicants note, for the record, that the Office Action appears to summarize applicants' position as indicating that "the 15B3 antibody of the prior art recognizes a 3 dimensional structure, which comprises the YYR epitope," -- this is plainly not applicants' position. 15B3 recognizes a 15B3 epitope, and not a YYX epitope as presently claimed.

CONCLUSION

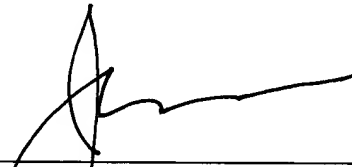
Applicants submit that the claims are now in condition for allowance, and such action is respectfully requested.

Enclosed is a petition to extend the period for replying for three months, to and including July 20, 2004. Also enclosed is a Notice of Appeal, in which applicants respectfully appeal the final rejection of the pending claims.

If there are any additional charges, or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

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